REMARKS

The Examiner has rejected claims 1 and 3-10 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,785,667 to Orbanes et al. The Examiner has further rejected claim 2 under 35 U.S.C. 103(a) as being unpatentable over Orbanes et al. in view of U.S. Patent 5,987,142 to Courneau et al.

The Orbanes et al. patent discloses a method and apparatus for extracting data objects and locating them in virtual space, in which the system enables "the user to view, search through and interact with information through a virtual environment, which is related to a selected physical paradigm, in an unrestricted manner" (col. 1, lines 17-21). In particular, as described in Orbanes et al. at col. 7, lines 57-63, "FIG. 1 is a schematic diagram depicting an exemplary embodiment of a viewing a system 100 in accord with the invention. The viewing system 100 includes an extractor module 102, a stylizer module 104, a template 105, a protocolizer 106, user controls 107, and a display 108, which present data objects to the user in a virtual three dimensional space 110."

The subject invention relates to a data representation apparatus which provides, to a user of the apparatus, an audio signal processed such that it seems to originate from different spatial positions depending on the value of a positionless data signal. This is described in the specification on page 8, line 27 to page 9, line 5, in which the data representation apparatus may be arranged in an MP3 player where the positionless data signal

relates to the pace of the user. In one embodiment, a beep may be added to the music being reproduced, the spatial positioning of the beep being indicative to the user of his/her pace, the position directly in front of the user indicating he/she is running at his/her desired pace.

As noted in MPEP § 2141.01(a)I, "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992).

The Examiner indicates "Orbanes discloses a data representation apparatus for representing data by means of an audio signal. In one embodiment Orbanes teaches that the system would respond to voice commands (reads on the claimed positionless data, with different commands corresponding to the first value and the second value). See col. 37, lines 60-64."

The portion of Orbanes et al. noted by the Examiner states:

>   "Other enhancements to the system 100 include using
>   voice recognition. According to one embodiment, the
>   user can speak all of the available system commands,
>   such as, "zoom in", "zoom out", "pan left", select
>   <object> where <object> is a word(s) in a database."

It is not clear to Applicants how the Examiner is equating this disclosure in Orbanes et al. with the claim limitations "A

data representation apparatus for representing data by means of an audio signal" and "an audio processing unit for delivering the audio signal with a characteristic dependent upon a positionless data signal having at least a first value and a second value".

The Examiner further states "Orbanes teaches that the audible sound is generated by mapping a first action (for example, zoom in) to a first position in a three-dimensional space, and the second action to a second position (col. 38, lines 6-8) and the audio processing unit changes the characteristic of the audio signal (col. 38, lines 2-15)."

This portion of Orbanes et al. (actually col. 38, lines 1-15) states:

> "In an embodiment with sound, the system 100 coordinates the sound with the zooming to enhance further the virtual three-dimensional effect. For example, the closer the user virtually navigates to a data object, the louder the sound of that data object becomes. As the user zooms into a map of a city, the closer to the street detail the user gets, the louder the street noise becomes. The sound can also be coordinated with what hierarchical level the user is on. For example, when on a street of a city, the user hears typical street noises associated with that location. As the user zooms into a restaurant on that street, the sounds change from the street noises to typical restaurant sounds associated with that particular restaurant. As the user zooms in for more restaurant detail, the restaurant sounds get louder, as discussed above."

From the above, it appears that Orbanes et al. maps the **loudness** of the audio signal to the voice commands, e.g., in the case of a user of the system viewing a map, the audio signal would be "street noise". By then using the voice command "zoom in",

simultaneously with the display zooming in to the "street level", the volume of the "street noise" increases.

However, Applicants submit that there is no disclosure of the claims limitations "a mapping unit for mapping the first value of the positionless data signal to a first position in three-dimensional space, and the second value of the positionless data signal to a second position in three-dimensional space" and "wherein the audio processing unit changes the characteristic of the audio signal, resulting in the audio signal appearing, to a user listening to the audio signal, to originate from the first position when the positionless data signal has the first value, and from the second position when the positionless data signal has the second value".

The Courneau et al. patent discloses a system of sound spatialization and method personalization for the implementation thereof, in which sound signals representative of a respective number of sources are processed such that they appear from particular positions to a user of the system.

Claim 2 includes the limitation "the audio processing unit comprises a filter for applying a head related transfer functions to an input audio signal to obtain the output audio signal appearing to originate from the first position and the second position".

The Examiner now states "Courneau teaches that the HRTF is being used to simulate the virtual sound environment. HRTFs are functions describing the delay, the frequency response and the

amplitude response of the sound at the two ear drums of the user. Thus, it would have been obvious to one of ordinary skill in the art to modify Orbanes in view of Courneau by using a filter as a function of HRTF to generate audio signal in order to simulate a more realistic sound effect in a virtual environment."

Applicants first submit that there is no incentive or motivation for combining Orbanes et al. with Courneau in that Orbanes et al. is basically a viewing system, and mapping the audio signal to different positions in three-dimensional space would detract the user's attention from the display screen, thereby defeating the utility of the Orbanes et al. invention.

In view of the above, Applicants believe that the subject invention, as claimed, is not rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicants believe that this application, containing claims 1-10, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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